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(54) **METHODS AND DEVICES FOR CHARGED MOLECULE MANIPULATION**

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See application file for complete search history.

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(57) **ABSTRACT**

Systems and methods for manipulating molecular material are provided. In one aspect, for example, a method for manipulating molecular material may include positioning an uncharged needle structure in electrical proximity with a charged molecular material at a first locus in a liquid environment, charging the needle structure such that at least a portion of the charged molecular material becomes associated with the needle structure, moving the needle structure and the first locus relative to one another, and discharging the needle structure to disassociate the charged molecular material at a second locus.

7 Claims, 5 Drawing Sheets